

Application No. 10/720,607
Attorney Docket No. 2003B126

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Amendment to the Claims

This Listing of Claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 -12 (Cancelled)

Claim 13 (Currently Amended): A catalyst composition consisting of:

- (a) a support;
- (b) rhodium component;
- (c) an indium component; and optionally
- (d) a third metal component wherein the metal in said third metal component is selected from the group consisting of iron, cobalt, and ruthenium,

wherein said ~~first rhodium~~ and ~~second metal indium~~ components and said third metal component, if present, are predominantly contained in an outer surface layer of the support having a depth of not more than 300 microns.

Claim 14 -15 (Cancelled)

Claim 16 (Original): The catalyst composition of claim 13 wherein the depth of said outer surface layer of the support is not more than 100 microns.

Claim 17 (Cancelled)

Claim 18 (Previously Presented): The catalyst composition of claim 13, wherein rhodium is present in the amount of from about 0.01% to about 10% by weight of the total catalyst composition including the support.

Claim 19 (Previously Presented): The catalyst composition of claim 13, wherein rhodium is present in the amount of from about 0.04% to about 5% by weight of the total catalyst composition including the support.

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Claim 20 (Previously Presented): The catalyst composition of claim 13, wherein indium is present in the amount of from about 0.01 wt% to about 30 wt% by weight of the total catalyst composition including the support.

Claim 21 (Previously Presented): The catalyst composition of claim 13, wherein indium is present in the amount of from about 0.04 wt% to about 20 wt% by weight of the total catalyst composition including the support.

Claim 22-24 (Cancelled)

Claim 25 (Previously Presented): The catalyst composition of claim 13, wherein rhodium is present in the amount of from about 0.04% to about 10% by weight of the total catalyst composition including the support.

Claim 26 (Previously Presented): The catalyst composition of claim 13, wherein the metal in said third metal component is present in the amount of from about 0.01% to about 50% by weight of the total catalyst composition including the support.

Claim 27 (Previously Presented): The catalyst composition of claim 13, wherein the metal in said third metal component is present in the amount of from about 0.05% to about 30% by weight of the total catalyst composition including the support.

Claim 28 (Cancelled)

Claim 29 (Cancelled)

Claim 30 (Previously Presented): The catalyst composition of claim 13 wherein the metal in said third metal component is iron present in the amount of from about 0.05% to about 30% by weight of the total catalyst composition including the support.

Claim 31 (Previously Presented): The catalyst composition of claim 13 wherein the metal in said third metal component is iron present in the amount of from about 0.1% to about 20% by weight of the total catalyst composition including the support.

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Claim 32 (Previously Presented): The catalyst composition of claim 13 wherein the metal in said third metal component is cobalt present in the amount of from about 0.05% to about 30% by weight of the total catalyst composition including the support.

Claim 33 (Previously Presented): The catalyst composition of claim 13 wherein the metal in said third metal component is cobalt present in the amount of from about 0.1% to about 25% by weight of the total catalyst composition including the support.

Claim 34 (Previously Presented): The catalyst composition of claim 13 wherein the metal in said third metal component is ruthenium present in the amount of from about 0.05% to about 10% by weight of the total catalyst composition including the support.

Claim 35 (Previously Presented): The catalyst composition of claim 13 wherein the metal in said third metal component is ruthenium present in the amount of from about 0.1% to about 5% by weight of the total catalyst composition including the support.

Claim 36 (Currently Amended): A method of making a catalyst composition according to claim 13, the method comprising:

- (a) applying a rhodium compound to a surface layer of a support having a depth of not more than 300 microns;
- (b) applying an indium compound to a surface layer of the support having a depth of not more than 300 microns; and optionally
- (c) applying a compound of a third metal selected from the group consisting of iron, cobalt, and ruthenium to a surface layer of the support having a depth of not more than 300 microns.

Claim 37 (Previously Presented): The method of claim 36 wherein said third metal compound is applied to the support before either the rhodium compound or the indium compound.

Claim 38 (Previously Presented): The method of claim 36 wherein the indium compound is applied to the support either concurrently with or before the rhodium compound.

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Claim 39 (Original): The method of claim 36 wherein at least one of (a), (b) and (c) is effected by an impregnation, precipitation, slurry mixing or coating step.

Claim 40-43 (Cancelled)

Claim 44 (Original): The method of claim 36 and, after (a) and/or (b) and/or (c), calcining the support at a temperature of about 100°C to about 600°C.

Claim 45 (Original): The method of claim 36 and, after (a), (b) and (c), treating the calcined support in a reducing atmosphere at a temperature in excess of 200°C.

Claim 46 (Withdrawn): A process for selectively removing alkynes or diolefins from a feedstock also containing olefins, the process comprising contacting the feedstock with hydrogen in the presence of a catalyst composition made by the method of claim 36.

Claim 47 (Withdrawn): A process for selectively removing alkynes or diolefins from a feedstock also containing olefins, the process comprising contacting the feedstock with hydrogen in the presence of a catalyst composition as claimed in claim 1.

Claim 48 (Withdrawn): The process of claim 47 wherein the alkynes or diolefins have 2 to 4 carbon atoms and the feedstock also contains C₂ to C₄ olefins.

Claim 49 (Withdrawn): The process of claim 47 wherein said contacting is conducted at a temperature of from about 20°C to about 150°C, a pressure of from about 690 kPa to 4100 kPa, and a molar ratio of hydrogen to alkynes and diolefins of from about 1 to about 1000.

Claim 50 (Withdrawn): The process of claim 47 wherein said contacting is conducted at a temperature of from about 30°C to about 100°C, a pressure of from about 1400 kPa to 3400 kPa, and a molar ratio of hydrogen to alkynes and diolefins of from about 1.1 to about 800.

Claim 51 (Cancelled)

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SUPPORT FOR THE AMENDMENT

Claim 13 now provides for a catalyst consisting of the two embodiments set forth in the specification, e.g., paragraphs [0016] and [0019]. That the (optional) third metal component may have a metal selected from iron, cobalt, and ruthenium finds support in paragraph [0039] and original Claim 29. Note that the definition of "component" includes the elemental metal and/or a compound of said metal, as set forth in paragraphs [0031] and [0043]. The optional components are now also recited to be predominantly in the outer surface layer. The amendments are believed to be strictly editorial in nature and/or to conform to the new language in Claim 13 concerning "consisting of".

No new matter is presented.